Received
December 9, 2020
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Diversified Midstream LLC; Glenville Compressor Station #37
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 021-00010
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R30-02100010-2016

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☐ Title V Initial
  - ☒ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:
  - ☐ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☒ Responsible Official/Authorized Representative
    - Name: Wes Smith
    - Email: jwsmith@dgoc.com
    - Phone Number: 330-896-8510
  - ☒ Company Contact
    - Name: Rocky Stilwell
    - Email: rstilwell@dgoc.com
    - Phone Number: 330-896-8510
  - ☒ Consultant
    - Name: Jesse Hanshaw
    - Email: jhanshaw@slrconsulting.com
    - Phone Number: 304-545-8563

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DIVERSIFIED GAS & OIL
PLC

Diversified Midstream LLC

Glenville Compressor Station #37

Facility ID No. 021-00010

Glenville, West Virginia

Title V Operating Permit Renewal Application

SLR Ref: 116.02100.00031

December 2020

SLR

Title V Operating Permit Renewal Application

Prepared for:

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania 25314

This document has been prepared by SLR International Corporation. The material and data in this permit application were prepared under the supervision and direction of the undersigned.

Chris Boggess
Senior Engineer

Jesse Hanshaw, P.E.
Principal Engineer

CONTENTS

ATTACHMENTS

Notes:
ATTACHMENT F – N/A – Source is in compliance with all facility wide requirements
ATTACHMENT G – N/A – No control devices utilized at the facility
ATTACHMENT H – N/A – No CAM plan requirements at the facility

APPLICATION FOR PERMIT

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street SE

Charleston, WV 25304

Phone: (304) 926-0475

www.dep.wv.gov/daq

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INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):**
Diversified Midstream LLC

2. Facility Name or Location:
Glenville Compressor Station #37

3. DAQ Plant ID No.:
021-00010

4. Federal Employer ID No. (FEIN):
51-1618404

5. **Permit Application Type:**

☐ Initial Permit — When did operations commence? 1943
☒ Permit Renewal — What is the expiration date of the existing permit? 06/09/2021
☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity:

☐ Corporation ☐ Governmental Agency ☒ LLC
☐ Partnership ☐ Limited Partnership

7. Is the Applicant the:

☐ Owner ☐ Operator ☒ Both

If the Applicant is not both the owner and operator, please provide the name and address of the other party.

_____
_____
_____

8. Number of onsite employees:

Less than ten (10) employees

9. Governmental Code:

☒ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☒ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: 101 McQuiston Drive		
City: Jackson Center	**State:** PA	**Zip:** 16133
Telephone Number: (724) 662 0300	**Fax Number:**	

12. Facility Location		
Street: 144 State Highway 5	**City:** Glenville	**County:** Gilmer
UTM Easting: 515.900 km	**UTM Northing:** 4,420.840 km	**Zone:** ☒ 17 or ☐ 18
Directions: From Charleston, take I-79 North to the Bursnville exit (Exit 79). Take State Route 5 North towards Glenville. Station is on the left very near the interstion of Routes 5 and 19. (approximately 16 miles on SR 5)		
Portable Source? ☐ Yes ☒ No		
Is facility located within a nonattainment area? ☐ Yes ☒ No		**If yes, for what air pollutants?**
Is facility located within 50 miles of another state? ☒ Yes ☐ No		**If yes, name the affected state(s).** Ohio
Is facility located within 100 km of a Class I Area[1]? ☒ Yes ☐ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☒ No		**If yes, name the area(s).** Otter Creek Wilderness

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Wes Smith		**Title:** VP Compression Services – Southern Operations
Street or P.O. Box: 100 Diversified Way		
City: Pikeville	**State:** KY	**Zip:** 41501
Telephone Number: (330) 896 8510	**Fax Number:**	
E-mail address: jwsmith@dgoc.com		
Environmental Contact: Dave Stucker		**Title:** EHS Department - Coordinator
Street or P.O. Box: 125 Industrial Road		
City: Waynesburg	**State:** PA	**Zip:** 15370
Telephone Number: (717) 668 5529	**Fax Number:**	
E-mail address: dstucker@dgoc.com		
Application Preparer: Jesse Hanshaw		**Title:** Principal Engineer
Company: SLR International Corporation		
Street or P.O. Box: 8 Capitol St., Suite 300		
City: Charleston	**State:** WV	**Zip:** 25301
Telephone Number: (681) 205-8949	**Fax Number:** (681) 205-8969	
E-mail address: jhanshaw@slrconsulting.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Natural Gas Transmission	Natural Gas	486210	4922

Provide a general description of operations.

The Glenville Compressor Station #37 is a natural gas transmission facility covered by Standard Industrial Classification (SIC) Code 4922. The station has the potential to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year. The station consists of three (3) 300 hp, 2SLB, reciprocating engines, one (1) 134 hp, 4SRB, reciprocating engine/generator and one (1) 1.26 mmBtu/hr heating boiler.

15. Provide an Area Map showing plant location as ATTACHMENT A.

16. Provide a Plot Plan(s), e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary

Instructions: Mark all applicable requirements.

☒ SIP	☐ FIP
☐ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☒ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☐ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☒ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ CAIR NO_x Annual Trading Program (45CSR39)	☐ CAIR NO_x Ozone Season Trading Program (45CSR40)
☐ CAIR SO_2 Trading Program (45CSR41)	

19. Non Applicability Determinations

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

45CSR4 – ***To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors:*** According to 45CSR§4-7.1, this rule shall not apply to the following sources of objectionable odor until such time as feasible control methods are developed: Internal Combustion Engines

45CSR10 – ***To Prevent and Control Air Pollution from the Emission of Sulfur Oxides:*** 45CSR10 is not applicable to the facility's heater because its maximum design heat input (DHI) is less than 10 MMBtu/hr

45CSR21 – ***To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds:*** This facility is located in Gilmer County which is not one of designated VOC maintenance counties subject to the rule. VOC maintenance counties include Cabell, Kanawha, Putnam, Wayne and Wood Counties.

45CSR27 – ***To Prevent and Control the Emissions of Toxic Air Pollutants:*** Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts equipment "used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight."

☒ Permit Shield

19. Non Applicability Determinations *(Continued)* *- Attach additional pages as necessary.*

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

40 CFR 60 Subpart Dc – ***Standards of Performance for Steam Generating Units:*** The heating boiler at this facility is less than 10 mmBtu/hr; Hence Subpart Dc is not applicable in accordance with 60.40c(a)

40 CFR 60 Subparts K,Ka – ***Standards of Performance for Storage Vessels for Petroleum Liquids:*** All tanks at the facility are below 40,000 gallons in capacity as specified in 60.110a(a)

40 CFR 60 Subpart Kb – ***Standards of Performance for Volatile Organic Liquid S****torage Vessels:* All tanks at the facility are below 75m^3 (19,813 gallons) in capacity as specified in 60.110b(a)

40 CFR 60 Subpart KKK – ***Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant:*** This compressor station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.

40 CFR 60 Subpart IIII – ***Standards of Performance for Stationary Compression Ignition Internal Combustion Engines***: There are no compression ignition engines at this facility.

40 CFR 60 Subpart JJJJ – ***Standards of Performance for Stationary Spark Ignition Internal Combustion Engines:*** All engines at the facility were constructed, reconstructed, or modified prior to the June 12, 2006 applicability date listed in 60.4230(a)(4).

40 CFR 60 Subpart OOOO – ***Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution***: This subpart does not apply to the facility since the facility is a transmission facility. So it is exempt from the requirements for gas wells, centrifugal compressors, reciprocating compressors, and/or pneumatic controllers. Although this applies to storage vessels located at transmission facilities, there have been no storage vessels constructed, modified, or reconstructed after August 23, 2011 in accordance with 60.5365(e).

40 CFR 60 Subpart OOOOa – ***Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015***. The GHG and VOC requirements defined by this NSPS are not applicable to this site because there were no affected sources that commenced constructed prior to September 18, 2015 in accordance with [40CFR§60.5365a]

40 CFR 63 Subpart HHH – ***National Emission Standards for Hazardous Air Pollutants from Natural gas Transmission and Storage Facilities:*** This subpart does not apply to the facility since it is not a major source of HAPs as defined in 40CFR§63.1270(a) and does not operate a dehydration process.

40 C.F.R. 63 Subpart DDDDD; ***National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters:*** This subpart does not apply to the facility since it is not a major source of HAPs as defined in 40CFR§63.7575.

40 C.F.R. 63 Subpart JJJJJJ; ***National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:*** This subpart does not apply to the facility since the heating boiler is fueled by natural gas as defined in 40CFR§63.11195(e).

40 CFR 64 ***– Compliance Assurance Monitoring (CAM):*** There are no add-on controls at this facility; therefore, in accordance with 40CFR§64.2(b)(1), CAM is not applicable to this facility.to this facility.

☒ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

T5 – 3.1.1 – 45 CSR 6-3.1 – Open burning prohibited
T5 – 3.1.2 – 45 CSR 6-3.2 – Open burning exemption stipulations
T5 – 3.1.3 – 40 CFR Part 61 and 45 CSR 34 – Asbestos inspection and removal
T5 – 3.1.4 – 45 CSR 4 – No objectionable odors
T5 – 3.1.5 – 45 CSR 11-5.2 – Standby plans for emergency episodes
T5 – 3.1.6 – WV Code 22-5-4 (a) (14) – Annual emission inventory reporting
T5 – 3.1.7 – 40 CFR Part 82 Subpart F – Ozone depleting substances
T5 – 3.1.8 – 40 CFR Part 68 – Risk Management Plan
T5 – 3.1.9 – 45 CSR 17-3.1 – Fugitive PM prohibited
T5 – 3.3.1 – 45 CSR 22-5-4(a)(14-15) & 45CSR13 - Stack Testing - Conduct stack testing as required
T5 – 3.4.1 – 45 CSR 30-5.1 - Monitoring information – general monitoring requirements
T5 – 3.4.2 – 45 CSR 30-5.1 - Retention of records - Maintain records for a period of 5 years
T5 – 3.4.3 – 45 CSR 30-5.1 - Odors - Maintain records of odor complaints and corrective actions
T5 – 3.4.4 – 45 CSR 17.3 – Fugitive PM shall not cause statutory Air Pollution
T5 – 3.5.1 – 45 CSR 30-4.4. and 5.1.c.3.D – All documents required by permit shall be certified by a Responsible Official
T5 – 3.5.2 – 45 CSR 30-5.1.c.3.E. - A permittee may request confidential treatment
T5 – 3.5.3 – 45 CSR 30-5 - Communication required or permitted to be made to the DEP and/or USEPA
T5 – 3.5.4 – 45 CSR 30-8 - Certified emissions statement – Operator will Submit a certified emissions statement and pay fees on an annual basis
T5 – 3.5.5 – 45 CSR 30-5.3.e. - Compliance certification. The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ
T5 – 3.5.6 – 45 SR§30-5.1.c.3.A - Semi-annual monitoring reports.
T5 – 3.5.7 – 45 CSR 30-5.7.a through e. - Emergencies
T5 – 3.5.8 – 45 CSR 30-5.1.c.3.B. and C. - Deviations
T5 – 3.5.9 – 45 CSR 30-4.3.h.1.B. New applicable requirements. If any requirement is promulgated, the permittee will meet such requirements on a timely basis

☒ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

T5 – 3.1.3 – 40 CFR Part 61 and 45 CSR 34 – Prior to demolition/construction buildings will be inspected for asbestos and documented accordingly
T5 – 3.1.4 – 45 CSR 4 – Permittee shall maintain records of all odor complaints received
T5 – 3.1.5 – 45 CSR 11 – Upon request by the Secretary, the permittee shall prepare a standby plan
T5 – 3.1.6 – WV 22-5-4 – The permittee shall submit annual emission inventory reports
T5 – 3.1.7 – 40 CFR Part 82 Subpart F – The permittee will prohibit maintenance, service, or repair of appliances containing ozone depleting substances without persons certified pursuant to 40 CFR 82.161
T5 – 3.1.8 – 40 CFR Part 68 – Should the permittee become subject to 40 CFR Part 68, a RMP shall be submitted
T5 – 3.3.1 – 45 CSR 22-5-4 Stack Testing – All protocols and reports will be submitted to the WVDAQ
T5 – 3.4.1 & 3.4.2 – 45 CSR 30-5.1 Retention of Records - Maintain records of all information required by permit for 5 yrs.
T5 – 3.4.3 – 45 CSR 30-5.1 Odors - Maintain records of all odor complaints and responses.
T5 – 3.5.1 – 45 CSR 30-4.4 ***and*** 5.1 Responsible Official - Reports, certifications, etc. shall contain a certification by the responsible official.

T5 – 3.5.4 – 45 CSR 30-8 Certified emissions statement – Operator will Submit a certified emissions statement and pay fees on an annual basis
T5 – 3.5.5 – 45 SR§30-5.3.e Compliance Certification - Prepare and submit an emission inventory as requested

T5 – 3.5.6 – 45 CSR§30-5.1.c.3.A. Semi-annual monitoring reports.

T5 – 3.5.7 – 45 CSR30-5.7.a through e. - For reporting emergency situations, refer to Section 2.17 of this permit
T5 – 3.5.8 – 45 CSR 30-5.1.c.3.B. and C. – Deviations, In addition to required monitoring reports, the permittee shall promptly submit supplemental reports and notices of deviations / include upset conditions, cause of deviation (s) and corrective actions.
T5 – 3.5.9 – 45 CSR 30-4.3.h.1.B. New applicable requirements. If any requirement is promulgated, the permittee will meet such requirements on a timely basis

Are you in compliance with all facility-wide applicable requirements? ☒ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R30-02100010-2016	06/09/2016	
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22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance	Permit Condition Number
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Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	15.90
Nitrogen Oxides (NO_X)	125.57
Lead (Pb)	-
Particulate Matter ($PM_{2.5}$)[1]	1.95
Particulate Matter (PM_{10})[1]	1.95
Total Particulate Matter (TSP)	1.95
Sulfur Dioxide (SO_2)	0.03
Volatile Organic Compounds (VOC)	8.23
Hazardous Air Pollutants[2]	Potential Emissions
Benzene	0.09
Toluene	0.04
Ethylbenzene	0.01
Xylene	0.01
n-Hexane	0.03
Formaldehyde	2.18
Total HAPs	3.17
Regulated Pollutants other than Criteria and HAP	Potential Emissions
$CO2_e$	5404.80

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☒	1.	Air compressors and pneumatically operated equipment, including hand tools.
☐	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☒	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☒	4.	Bathroom/toilet vent emissions.
☒	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☐	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☒	8.	Boiler water treatment operations, not including cooling towers.
☒	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO2 lasers, used only on metals and other materials which do not emit HAP in the process.
☒	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☒	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☒	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☐	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.

24. Insignificant Activities (Check all that apply)

☐ 18. Emergency road flares.

☒ 19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units.

Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis:

Hot Water Heater (HWH01)

Pollutant	*PM*	*SO2*	*NOx*	*CO*	*VOC*
Emissions (lb/hr)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Emissions (lb/yr)	*1.62*	*0.13*	*21.31*	*17.90*	*1.17*

Miscellaneous Emission Units

Emission Point	*VOC Emissions (lb/hr)*	*VOC Emissions (lb/yr)*
Tank 1	*0.00*	*1.54*
Tank 2	*0.19*	*1,618.17*
Fugitives	*0.40*	*3,488.69*
Blowdowns	*0.19*	*1,698.47*
Totals	***0.78***	***6,805.87***

☐ 20. Emission units which do not have any applicable requirements, and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27.

Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:

Hot Water Heater (HWH01)

Pollutant	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*n-Hexane*	*Total HAPs*
Emissions (lb/hr)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Emissions (lb/yr)	*0.00*	*0.00*	*0.00*	*0.00*	*0.38*	*0.40*

Fugitives

Pollutant	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*n-Hexane*	*Total HAPs*
Emissions (lb/hr)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Emissions (lb/yr)	*15.56*	*0.02*	*1.73*	*3.46*	*3.46*	*24.22*

Blowdown Venting

Pollutant	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*n-Hexane*	*Total HAPs*
Emissions (lb/hr)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Emissions (lb/yr)	*7.57*	*0.01*	*0.84*	*1.68*	*1.68*	*11.79*

☐ 21. Environmental chambers not using hazardous air pollutant (HAP) gases.

☐ 22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.

☐ 23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses,

24. Insignificant Activities (Check all that apply)		
		such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☒	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☐	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☒	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☒	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☒	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☒	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☒	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.
☒	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☐	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☒	43.	Process water filtration systems and demineralizers.
☐	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☒	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☒	50.	Space heaters operating by direct heat transfer.

24. Insignificant Activities (Check all that apply)		
☐	51.	Steam cleaning operations.
☐	52.	Steam leaks.
☐	53.	Steam sterilizers.
☐	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☒	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☐	58.	Tobacco smoking rooms and areas.
☒	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

*Note: This Certification must be signed by a responsible official. The **original**, signed in **blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)	
Name: Wes Smith	Title: VP Compression Services – Southern Operations

Responsible official's signature:

Signature: _____ Signature Date: 12-8-2020

(Must be signed and dated in blue ink)

Received
December 9, 2020
WV DEP/Div of Air Quality

Note: Please check all applicable attachments included with this permit application:

☒	ATTACHMENT A: Area Map
☒	ATTACHMENT B: Plot Plan(s)
☒	ATTACHMENT C: Process Flow Diagram(s)
☒	ATTACHMENT D: Equipment Table
☒	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☐	ATTACHMENT G: Air Pollution Control Device Form(s)
☐	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

ATTACHMENT A

AREA MAP

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

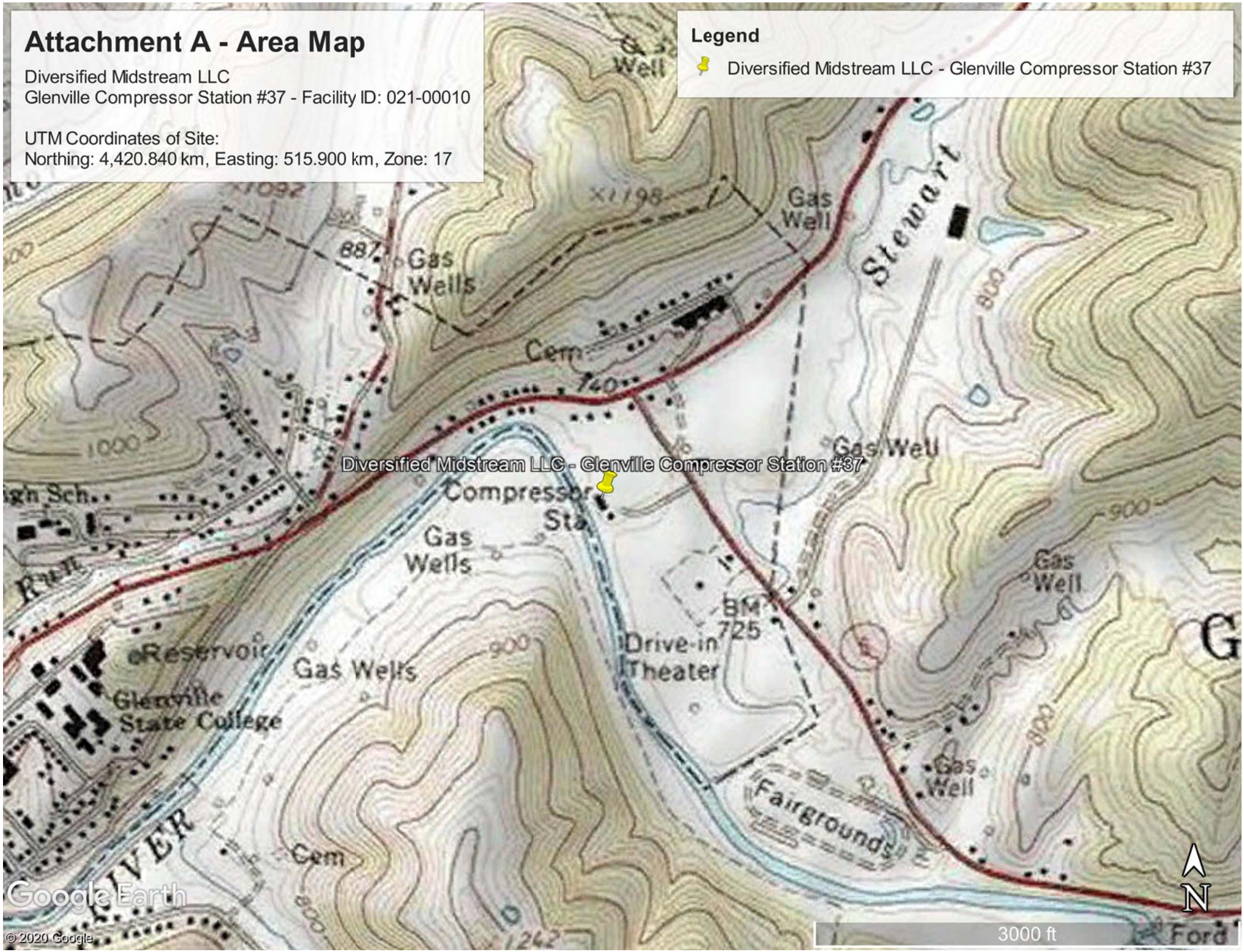
Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

Attachment A - Area Map

Diversified Midstream LLC
Glenville Compressor Station #37 - Facility ID: 021-00010

UTM Coordinates of Site:
Northing: 4,420.840 km, Easting: 515.900 km, Zone: 17



ATTACHMENT B

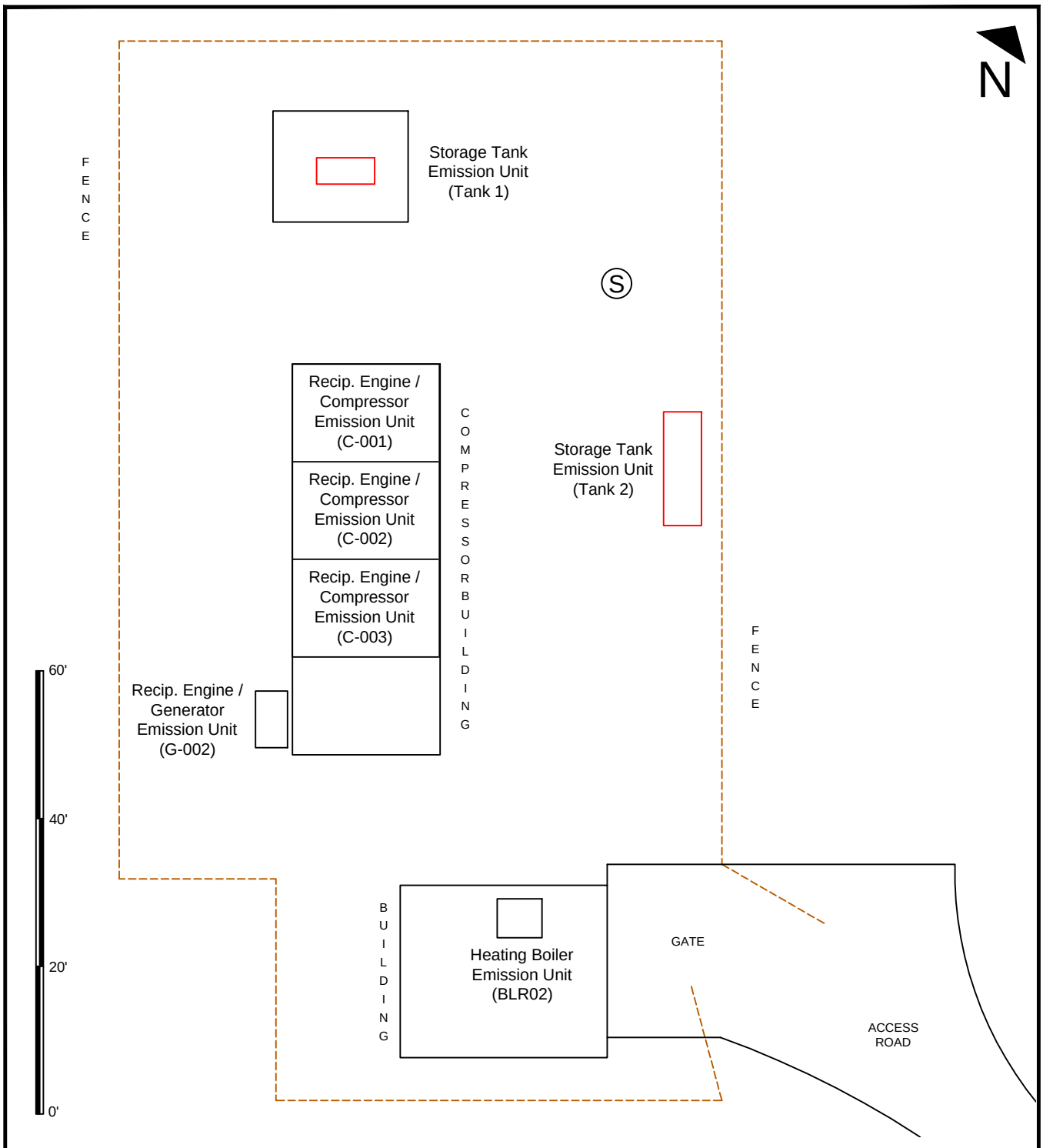
PLOT PLAN

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020



DRAWING LEGEND

- O/H Electric Line
- Utility Pole
- Piping (above ground)
- Piping (under ground)
- Valve
- Plug
- Tree/Brush line
- Crushed Stone Pad
- Storage Tank
- Secondary Containment Area
- Direction of Surface Runoff
- W — Well Head
- M — Meter
- S — Separator
- D — Drain
- C — Compressor
- RM — Residential Meter
- DRIP — Drip Tank

SLR

Diversified Midstream LLC

Jackson Center, PA 16133

Report:
Title V Operating Permit Renewal Application
Glenville Compressor Station #37

Drawing	Drawn By:
Plot Plan	CLB

Date: September 2020	Attachment B	Fig. No.
	Project #: 116.02100.00031	

ATTACHMENT C

PROCESS FLOW DIAGRAM

Title V Operating Permit Renewal Application

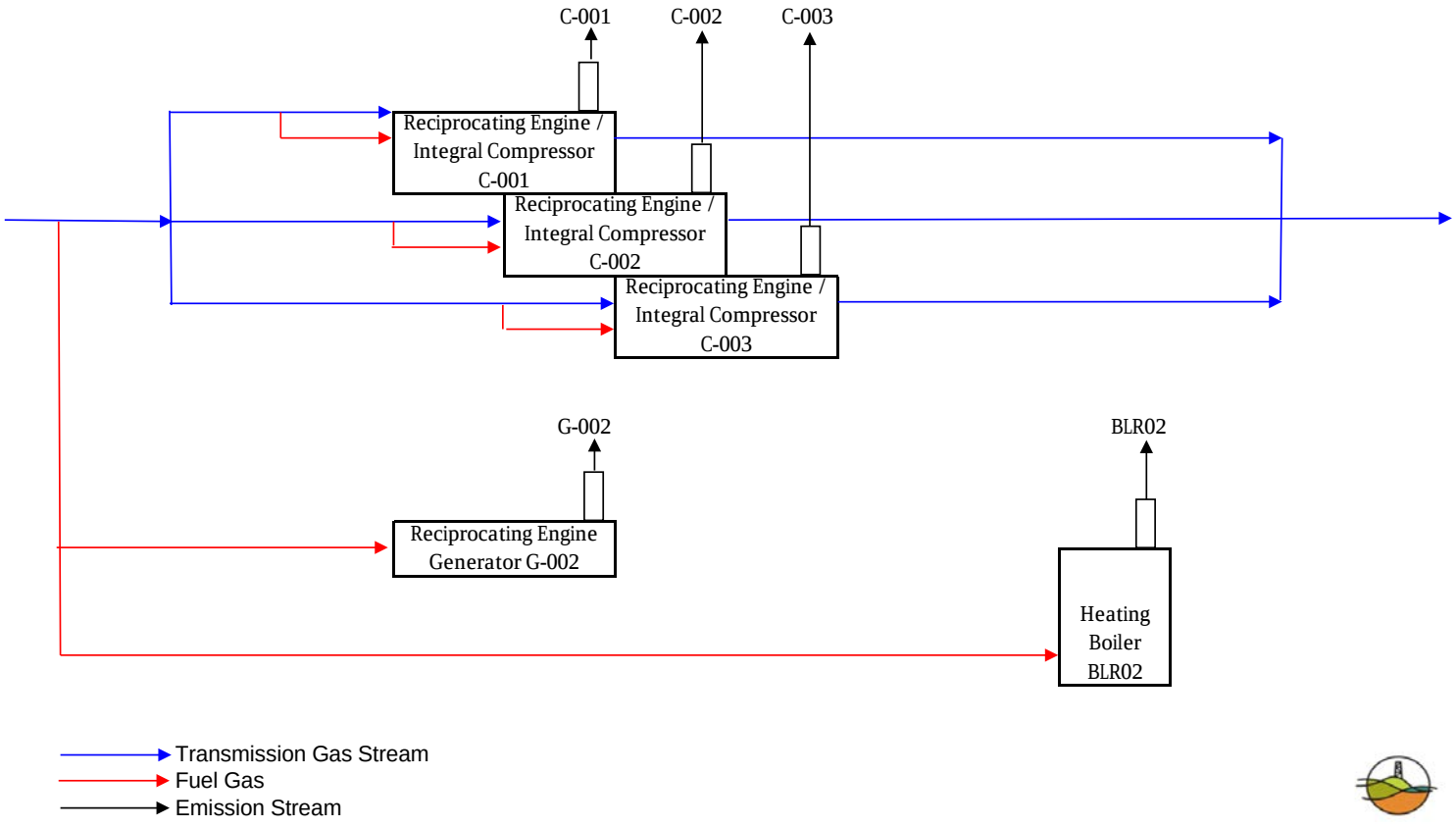
Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

ATTACHMENT C

GLENVILLE COMPRESSOR STATION #37 PROCESS FLOW DIAGRAM



DIVERSIFIED GAS & OIL PLC

ATTACHMENT D

EQUIPMENT TABLE

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 19 of the General Forms)

Emission Point ID[1]	Control Device[1]	Emission Unit ID[1]	Emission Unit Description	Design Capacity	Year Installed/ Modified
C-001	N/A	C-001*	Reciprocating Engine/Integral Compressor; Clark RA-32; 2 Stroke, Lean Burn	300 hp	1943
C-002	N/A	C-002*	Reciprocating Engine/Integral Compressor; Clark RA-32; 2 Stroke, Lean Burn	300 hp	1943
C-003	N/A	C-003*	Reciprocating Engine/Integral Compressor; Clark RA-32; 2 Stroke, Lean Burn	300 hp	1943
G-002	N/A	G-002*	Reciprocating Engine/Generator; Kohler 100RZDGD; 4 Stroke, Rich Burn	134.1 hp	2018
BLR02	N/A	BLR02*	Heating Boiler; Raypack; Model No. H8-1259B	1.26 mmBtu/hr	2017

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

***This equipment burns pipeline quality natural gas only.**

ATTACHMENT E

EMISSION UNIT FORM(S)

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number	**Emission unit name:**	**List any control devices associated with this emission unit:**
C-001	C-001	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reciprocating Engine / Integral Compressor; 300 HP; 2SLB; Clark RA-32

Manufacturer:	**Model number:**	**Serial number:**
Clark	RA-32	NA
Construction date:	**Installation date:**	**Modification date(s):**
1943	1943	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 300 HP

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
NA	NA	8,760

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** __ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating: 300 HP	**Type and Btu/hr rating of burners:** 10,000 Btu/hp-hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

2,433.1 scf/hr / 21,313,956 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,233 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Maintenance Requirements

40 C.F.R. § 63.6605 – Operating Requirements

40 C.F.R. § 63.6625(e)(5), (h), and (j) – Monitoring Requirements

40 C.F.R. § 63.6640(a) and Table 6 (Line 9) – Continuous Compliance Requirements

40 C.F.R. § 63.6660 – Recordkeeping Requirements

40 C.F.R. § 63.6665 – General Requirements/Provisions

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Change oil and oil filter, and inspect spark plugs, hoses, and belts every 4,320 hours of operation, or annually, whichever occurs first, and replace as necessary

40 C.F.R. § 63.6605, 63.6625(e)(5), 63.6640 and Table 6 (Line 9) – Work or Management Practices: Operate and Maintain the RICE according to the manufacturer's instructions OR develop and follow your own maintenance plan

40 C.F.R. § 63.6625 (h) – Minimize Idle Time during Startup to not exceed 30 Minutes

40 C.F.R. § 63.6625 (j) – Oil Analysis Program in lieu of Oil change requirement in Table 2d (Line 6)

40 C.F.R. § 63.6655 (d), and (e)(3) – Keep records of maintenance conducted and operating schedule on the RICE

40 C.F.R. § 63.6660 – Records retained for five (5) years and readily available for expeditious review

Are you in compliance with all applicable requirements for this emission unit? X Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number	**Emission unit name:**	**List any control devices associated with this emission unit:**
C-002	C-002	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reciprocating Engine / Integral Compressor; 300 HP; 2SLB; Clark RA-32

Manufacturer:	**Model number:**	**Serial number:**
Clark	RA-32	NA
Construction date:	**Installation date:**	**Modification date(s):**
1943	1943	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 300 HP

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
NA	NA	8,760

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** __ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating: 300 HP	**Type and Btu/hr rating of burners:** 10,000 Btu/hp-hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

2,433.1 scf/hr / 21,313,956 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,233 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Maintenance Requirements

40 C.F.R. § 63.6605 – Operating Requirements

40 C.F.R. § 63.6625(e)(5), (h), and (j) – Monitoring Requirements

40 C.F.R. § 63.6640(a) and Table 6 (Line 9) – Continuous Compliance Requirements

40 C.F.R. § 63.6660 – Recordkeeping Requirements

40 C.F.R. § 63.6665 – General Requirements/Provisions

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Change oil and oil filter, and inspect spark plugs, hoses, and belts every 4,320 hours of operation, or annually, whichever occurs first, and replace as necessary

40 C.F.R. § 63.6605, 63.6625(e)(5), 63.6640 and Table 6 (Line 9) – Work or Management Practices: Operate and Maintain the RICE according to the manufacturer's instructions OR develop and follow your own maintenance plan

40 C.F.R. § 63.6625 (h) – Minimize Idle Time during Startup to not exceed 30 Minutes

40 C.F.R. § 63.6625 (j) – Oil Analysis Program in lieu of Oil change requirement in Table 2d (Line 6)

40 C.F.R. § 63.6655 (d), and (e)(3) – Keep records of maintenance conducted and operating schedule on the RICE

40 C.F.R. § 63.6660 – Records retained for five (5) years and readily available for expeditious review

Are you in compliance with all applicable requirements for this emission unit? X Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number	**Emission unit name:**	**List any control devices associated with this emission unit:**
C-003	C-003	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reciprocating Engine / Integral Compressor; 300 HP; 2SLB; Clark RA-32

Manufacturer:	**Model number:**	**Serial number:**
Clark	RA-32	NA
Construction date:	**Installation date:**	**Modification date(s):**
1943	1943	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 300 HP

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
NA	NA	8,760

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** __ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating: 300 HP	**Type and Btu/hr rating of burners:** 10,000 Btu/hp-hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

2,433.1 scf/hr / 21,313,956 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,233 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Maintenance Requirements

40 C.F.R. § 63.6605 – Operating Requirements

40 C.F.R. § 63.6625(e)(5), (h), and (j) – Monitoring Requirements

40 C.F.R. § 63.6640(a) and Table 6 (Line 9) – Continuous Compliance Requirements

40 C.F.R. § 63.6660 – Recordkeeping Requirements

40 C.F.R. § 63.6665 – General Requirements/Provisions

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6603(a) and Table 2d (Line 6) – Change oil and oil filter, and inspect spark plugs, hoses, and belts every 4,320 hours of operation, or annually, whichever occurs first, and replace as necessary

40 C.F.R. § 63.6605, 63.6625(e)(5), 63.6640 and Table 6 (Line 9) – Work or Management Practices: Operate and Maintain the RICE according to the manufacturer's instructions OR develop and follow your own maintenance plan

40 C.F.R. § 63.6625 (h) – Minimize Idle Time during Startup to not exceed 30 Minutes

40 C.F.R. § 63.6625 (j) – Oil Analysis Program in lieu of Oil change requirement in Table 2d (Line 6)

40 C.F.R. § 63.6655 (d), and (e)(3) – Keep records of maintenance conducted and operating schedule on the RICE

40 C.F.R. § 63.6660 – Records retained for five (5) years and readily available for expeditious review

Are you in compliance with all applicable requirements for this emission unit? X Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number	**Emission unit name:**	**List any control devices associated with this emission unit:**
G-002	G-002	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Reciprocating Engine / Generator; 134.1 HP; 4SRB; Kohler; 100REZGD

Manufacturer:	**Model number:**	**Serial number:**
Kohler	100REZGD	NA
Construction date:	**Installation date:**	**Modification date(s):**
08/22/2016	2018	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 134.1 HP

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
NA	NA	500

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel?	**If yes, is it?**
X Yes ___ No	__ Indirect Fired X Direct Fired
Maximum design heat input and/or maximum horsepower rating:	**Type and Btu/hr rating of burners:**
134.1 HP	9,225 Btu/hp-hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas

1,390 scf/hr / 695,000 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		890 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 C.F.R. 60 Subpart JJJJ

40 C.F.R. § 60.4230(a)(4)(iv) – Applicability

40 C.F.R. § 60.4233(e), 60.4234, and Table 1 (Line 14) – Operating Requirements

40 C.F.R. § 60.4236(c) – Installation Requirements

40 C.F.R. § 60.4237(b) – Monitoring Requirements

40 C.F.R. § 60. 4243(b), (d), (e) and (g) – Compliance Requirements

40 C.F.R. § 60.4245(a) and (b) – Reporting Requirements

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. § 63.6590(c)(1) – General Requirements

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 C.F.R. 60 Subpart JJJJ

40 C.F.R. § 60.4233(e), 60.4234 and Table 1 (Line 14) – Unit shall comply with the emission standards set forth for NOx (2.0 g/hp-hr), CO (4.0 g/hp-hr) and VOC (1.0 g/hp-hr) for the entire life of the engine.

40 C.F.R. § 60.4237(b) – Install a non-resettable meter to monitor hours of operation.

40 C.F.R. § 60.4243(b) – Compliance;

- Permittee shall purchase a certified engine and operate and maintain the certified stationary SI ICE and control device according to the manufacturer's emissions related emissions instructions.
- Permittee must keep records of maintenance conducted to demonstrate compliance, but no performance testing is required.

40 C.F.R. § 60.4243(d) – Compliance/Operation;

- There is no time limit to operation of unit during emergency situations
- Operation of unit shall be limited to a maximum of 100 hours per calendar year for any combination of maintenance & readiness testing, emergency demand response, periods of voltage or frequency deviations and select non-emergency operations.
- Non-emergency operations shall not exceed 50 hours per calendar year and are to be counted as part of the maximum 100 hours per calendar year operation limitation as described in the previous paragraph

40 C.F.R. § 60.4243(e) – Permittee may operate unit using propane as alternative fuel solely during emergency operations for maximum 100 hours per calendar year.

40 C.F.R. § 60.4243(g) – Permittee shall maintain and operate air to fuel ratio controllers appropriately to minimize emissions.

40 C.F.R. § 60.4245(a) and (b) – Permittee shall keep records on maintenance conducted and hours of operation, both for emergency use and non-emergency use.

40 C.F.R. 63 Subpart ZZZZ

40 C.F.R. 63.6590(c)(1) – Demonstrate compliance with this regulation by complying with the applicable parts of 40 CFR 60 Subpart JJJJ. No further requirements will apply under this subpart

Are you in compliance with all applicable requirements for this emission unit? X Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
BLR02	BLR02	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.):

Heating System Boiler; Raypack; 1.26 mmBtu/hr

Manufacturer:	**Model number:**	**Serial number:**
Raypack	H8-1259B	NA
Construction date:	**Installation date:**	**Modification date(s):**
NA	2017	NA

Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 1.26 mmBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
NA	NA	8,760

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? X Yes ___ No	**If yes, is it?** X Indirect Fired ___ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 1.26 mmBtu/hr	**Type and Btu/hr rating of burners:** 1.26 mmBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas
1,021.9 scf/hr / 8,951,825 scf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	Pipeline Quality		1,233 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	See Appendix A	
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
	See Appendix A	
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

See Appendix A

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

45 CSR§2-3.1. – Opacity Limit; shall not exceed ten (10) percent opacity

X Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45 CSR§2-3.2 – Compliance shall be determined using Method 9

Are you in compliance with all applicable requirements for this emission unit? X Yes ___No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT F

SCHEDULE OF COMPLIANCE FORM (NOT APPLICABLE)

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

ATTACHMENT G

AIR POLLUTION CONTROL DEVICE FORM (NOT APPLICABLE)

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

ATTACHMENT H

COMPLIANCE ASSURANCE MONITORING FORM (NOT APPLICABLE)

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

APPENDIX A

SUPPORTING CALCULATIONS

Title V Operating Permit Renewal Application

Glenville Compressor Station #37, Facility ID No. 021-00010
Glenville, West Virginia

Diversified Midstream LLC
101 McQuiston Drive
Jackson Center, Pennsylvania

December 2020

Table 1. Annual Potential To Emit (PTE) Summary
Diversified Midstream LLC - Glenville Station #37

Criteria Pollutants

Potential to Emit (PTE) - Criteria Pollutants

Source	PM	PM10	PM2.5	SO2	NOx	CO	VOC	CO2e
Engines (ton/yr)	1.904	1.904	1.904	0.023	124.961	15.216	4.730	4616.114
Generator (ton/yr)	0.006	0.006	0.006	0.000	0.148	0.296	0.074	36.216
Boilers (ton/yr)	0.035	0.035	0.035	0.003	0.458	0.385	0.025	661.643
Tanks (ton/yr)	--	--	--	--	--	--	0.810	--
Fugitives (ton/yr)	--	--	--	--	--	--	1.744	26.614
Blowdown Venting (ton/yr)	--	--	--	--	--	--	0.849	64.214
Total Emissions (ton/yr)	1.945	1.945	1.945	0.026	125.567	15.897	8.233	5404.802
Total Emissions (lb/hr)	0.444	0.444	0.444	0.006	28.668	3.629	1.880	1233.973

Hazardous Air Pollutants (HAPs)

Potential to Emit (PTE) - HAPs

Source		Benzene	Toluene	Ethylbenzene	Xylene	n-Hexane	Formaldehyde	Total HAPs
Engines (ton/yr)	--	0.076	0.038	0.004	0.011	0.018	2.176	3.135
Generator (ton/yr)	--	0.000	0.000	0.000	0.000	--	0.006	0.010
Boilers (ton/yr)	--	0.000	0.000	--	--	0.008	0.000	0.009
Tanks (ton/yr)	--	--	--	--	--	--	--	--
Fugitives (ton/yr)	--	0.008	0.000	0.001	0.002	0.002	--	0.012
Blowdown Venting (ton/yr)	--	0.004	0.000	0.000	0.001	0.001	--	0.006
Total Emissions (ton/yr)	--	0.089	0.038	0.006	0.013	0.028	2.183	3.171
Total Emissions (lb/hr)	--	0.020	0.009	0.001	0.003	0.006	0.498	0.724

Table 2. Natural Gas-Fired Compressor Emissions
Clark; RA-32; 2SLB
Diversified Midstream LLC - Glenville Station #37

Pollutant	Emission Factor		Note	PTE per Engine (lb/hr)	PTE per Engine (ton/yr)
Criteria Pollutants					
PM10/PM2.5	3.84E-02	lb/MMBtu	(2)	0.115	0.505
PM Condensables	9.91E-03	lb/MMBtu	(2)	0.030	0.130
PM/PM10/PM2.5 **	4.83E-02	lb/MMBtu	(2)	0.145	0.635
SO_2	5.88E-04	lb/MMBtu	(2)	0.002	0.008
~~NOx~~	~~3.17E+00~~	~~lb/MMBtu~~	(2)	~~9.510~~	~~41.654~~
~~CO~~	~~3.86E-01~~	~~lb/MMBtu~~	(2)	~~1.158~~	~~5.072~~
VOC	1.20E-01	lb/MMBtu	(2)	0.360	1.577
Hazardous Air Pollutants					
1,1,2,2-Tetrachloroethane	6.63E-05	lb/MMBtu	(2)	0.000	0.001
1,1,2-Trichloroethane	5.27E-05	lb/MMBtu	(2)	0.000	0.001
1,3-Butadiene	8.20E-04	lb/MMBtu	(2)	0.002	0.011
1,3-Dichloropropene	4.38E-05	lb/MMBtu	(2)	0.000	0.001
2-Methylnaphthalene	2.14E-05	lb/MMBtu	(2)	0.000	0.000
2,2,4-Trimethylpentane	8.46E-04	lb/MMBtu	(2)	0.003	0.011
Acetaldehyde	7.76E-03	lb/MMBtu	(2)	0.023	0.102
Acrolein	7.78E-03	lb/MMBtu	(2)	0.023	0.102
Benzene	1.94E-03	lb/MMBtu	(2)	0.006	0.025
Biphenyl	3.95E-06	lb/MMBtu	(2)	0.000	0.000
Carbon Tetrachloride	6.07E-05	lb/MMBtu	(2)	0.000	0.001
Chlorobenzene	4.44E-05	lb/MMBtu	(2)	0.000	0.001
Chloroform	4.71E-05	lb/MMBtu	(2)	0.000	0.001
Ethylbenzene	1.08E-04	lb/MMBtu	(2)	0.000	0.001
Ethylene Dibromide	7.34E-05	lb/MMBtu	(2)	0.000	0.001
Formaldehyde	5.52E-02	lb/MMBtu	(2)	0.166	0.725
Methanol	2.48E-03	lb/MMBtu	(2)	0.007	0.033
Methylene Chloride	1.47E-04	lb/MMBtu	(2)	0.000	0.002
n-Hexane	4.45E-04	lb/MMBtu	(2)	0.001	0.006
Naphthalene	9.63E-05	lb/MMBtu	(2)	0.000	0.001
PAH (POM)	1.34E-04	lb/MMBtu	(2)	0.000	0.002
Phenol	4.21E-05	lb/MMBtu	(2)	0.000	0.001
Styrene	5.48E-05	lb/MMBtu	(2)	0.000	0.001
~~Toluene~~	~~9.63E-04~~	~~lb/MMBtu~~	(2)	~~0.003~~	~~0.013~~
Vinyl Chloride	2.47E-05	lb/MMBtu	(2)	0.000	0.000
Xylenes	2.68E-04	lb/MMBtu	(2)	0.001	0.004
Total HAPs				**0.239**	**1.045**
Greenhouse Gas Emissions					
CO_2	116.98	lb/MMBtu	(3)	350.94	1537.12
CH_4	2.2E-03	lb/MMBtu	(3)	0.01	0.03
N_2O	2.2E-04	lb/MMBtu	(3)	0.00	0.00
$CO_2e^{(b)}$	-	-		351.30	1538.70

** PM Emission Factor is a Total PM EF including condesables and filterables

Calculations: If emission factor note 1 is used, use calculation (a). If emission factor note 2 or 3 is used, use calculation (b).

(a) Annual emissions (tons/yr) = Emission factor (g/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs) * (lb/453.6g)

(b) Annual emissions (tons/yr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

EMISSIONS INPUTS TABLE

Number of Units =	**3**		
Engine Power Output (kW) =	224		
Engine Power Output (hp) =	300		
Average BSFC (BTU/HP-hr) =	10,000	(4)	
Heat Content Natural Gas(Btu/scf) =	1,233.0	(5)	
Fuel Throughput (ft3/hr) =	2,433.1	(6)	
Fuel Throughput (mmft3/yr) =	21.3		
PTI Hours of Operation =	8,760		

(b) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) Manufacturers Spec Sheet

(2) AP-42, Chapter 3.2, Table 3.2-1, *Natural Gas-fired Reciprocating Engines* (7/00), Uncontrolled Emission Factors for 2-Stroke Lean-Burn Engines.

(3) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(4) Fuel consumption from manufacturer's specification sheet.

(5) Value obtained from AP-42, section 3.2

(6) Fuel throughput = BSFC (BTU/HP-hr) x Power (HP) / Heat Content (BTU/scf)

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 3. Reciprocating Engine / Generator Emissions
Kohler; 100 kW Em. Generator (100REZGD)
Diversified Midstream LLC - Glenville Station #37

Pollutant	Emission Factor			PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants							
PM10/PM2.5	9.50E-03	lb/MMBtu	(1)	0.012	(a)	0.003	(c)
PM Condensables	9.10E-03	lb/MMBtu	(1)	0.011	(a)	0.003	(c)
PM/PM10/PM2.5 **	1.94E-02	lb/MMBtu	(1)	0.024	(a)	0.006	(c)
SO_2	5.88E-04	lb/MMBtu	(1)	0.001	(a)	0.000	(c)
NOx	2.00E+00	g/hp-hr	(2)	0.591	(b)	0.148	(d)
CO	4.00E+00	g/hp-hr	(2)	1.183	(b)	0.296	(d)
VOC	1.00E+00	g/hp-hr	(2)	0.296	(b)	0.074	(d)
Hazardous Air Pollutants							
1,1,2,2-Tetrachloroethane	2.53E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
1,1,2-Trichloroethane	1.53E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
1,3-Butadiene	6.63E-04	lb/MMBtu	(1)	0.001	(a)	0.000	(c)
1,3-Dichloropropene	1.27E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Acetaldehyde	2.79E-03	lb/MMBtu	(1)	0.003	(a)	0.001	(c)
Acrolein	2.63E-03	lb/MMBtu	(1)	0.003	(a)	0.001	(c)
Benzene	1.58E-03	lb/MMBtu	(1)	0.002	(a)	0.000	(c)
Carbon Tetrachloride	1.77E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Chlorobenzene	1.29E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Chloroform	1.37E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Ethylbenzene	2.48E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Ethylene Dibromide	2.13E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Formaldehyde	2.05E-02	lb/MMBtu	(1)	0.025	(a)	0.006	(c)
Methanol	3.06E-03	lb/MMBtu	(1)	0.004	(a)	0.001	(c)
Methylene Chloride	4.12E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Naphthalene	9.71E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
PAH (POM)	1.41E-04	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Styrene	1.19E-05	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Toluene	5.58E-04	lb/MMBtu	(1)	0.001	(a)	0.000	(c)
Vinyl Chloride	7.18E-06	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Xylenes	1.95E-04	lb/MMBtu	(1)	0.000	(a)	0.000	(c)
Total HAPs				**0.040**		**0.010**	
Greenhouse Gas Emissions							
CO_2	116.98	lb/MMBtu	(3)	144.72	(a)	36.18	(c)
CH_4	2.2E-03	lb/MMBtu	(3)	0.00	(a)	0.00	(c)
N_2O	2.2E-04	lb/MMBtu	(3)	0.00	(a)	0.00	(c)
CO_2e[(e)]	-	-		144.86		36.22	

** PM Emission Factor is a Total PM EF including condesables and filterables

Calculations:

Hourly Emissions - If emission factor note 1 or 3 is used, use calculation (a). If emission factor note 2 is used, use calculation (b).

(a) Maximum Hourly Emissions (lb/hr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000 Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr)

(b) Maximum Hourly Emissions (lb/hr) = Emission factor (g/hp-hr) * Engine Power Output (hp) * (lb/453.6g)

Annual Emissions - If emission factor note 1 or 3 is used, use calculation (c). If emission factor note 2 is used, use calculation (d).

(c) Annual emissions (tons/yr) = Emission factor (lb/MMBtu) * (1MMBtu/1000000Btu) * Engine Power Output (hp) * Average BSFC (Btu/hp-hr) * Annual Hours of operation (hr/yr) * (1ton/2000lbs)

(d) Annual emissions (tons/yr) = Emission factor (g/hp-hr) * Engine Power Output (hp) * Annual Hours of operation (hr/yr) * (1ton/2000lbs) * (lb/453.6g)

EMISSION INPUTS TABLE		
Engine Power Output (kW) =	100.0	
Engine Power Output (hp) =	134.1	(4)
Average BSFC (BTU/HP-hr) =	9,225	(4)
Heat Content Natural Gas(Btu/scf) =	890.0	(4)
Fuel Throughput (ft3/hr) =	1,390.0	(6)
PTE Hours of Operation =	500	

(e) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) AP-42, Chapter 3.2, Table 3.2-3. - *Uncontrolled Emission Factors for 4-Stroke Rich Burn Engines* (7/00)

(2) Emission factors supplied from manufacturer's specification sheets

(3) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(4) Value is obtained from manufacturer's specification sheet.

(5) Value is obtained AP-42, Chapter 3.2, Table 3.2-3., Note b

(6) Fuel throughput = BSFC (BTU/HP-hr) x Power (HP) / Heat Content (BTU/scf)

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 4. Heating Boiler Emissions (BLR02)
Raypack; 1.26 mmBtu/hr
Diversified Midstream LLC - Glenville Station #37

Pollutant	Emission Factor			PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants							
PM/PM10/PM2.5	7.6E+00	lb/MMcf	(1)	0.008	(a)	0.034	(b)
SO_2	6.0E-01	lb/MMcf	(1)	0.001	(a)	0.003	(b)
NOx	1.0E+02	lb/MMcf	(2)	0.102	(a)	0.448	(b)
CO	8.4E+01	lb/MMcf	(2)	0.086	(a)	0.376	(b)
VOC	5.5E+00	lb/MMcf	(1)	0.006	(a)	0.025	(b)
Hazardous Air Pollutants							
Arsenic	2.00E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Benzene	2.10E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Beryllium	1.20E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Cadmium	1.10E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Chromium	1.40E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Cobalt	8.40E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Dichlorobenzene	1.20E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Formaldehyde	7.50E-02	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Hexane	1.80E+00	lb/MMcf	(4)	0.002	(a)	0.008	(b)
Lead	5.00E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Manganese	3.80E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Mercury	2.60E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Naphthalene	6.10E-04	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Nickel	2.10E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
PAH/POM	1.29E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Selenium	2.40E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Toluene	3.40E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Total HAPs				0.000		0.008	
Greenhouse Gas Emissions							
CO_2	116.98	lb/MMBtu	(6)	147.39	(c)	645.59	(d)
CH_4	2.2E-03	lb/MMBtu	(6)	0.00	(c)	0.01	(d)
N_2O	2.20E-04	lb/MMBtu	(6)	0.00	(c)	0.00	(d)
CO_2e[(e)]	-	-		147.55		646.26	

Calculations:
LB/MMCF

(a) Hourly emissions (lb/hr) = Emission Factor (lb/MMcf) * Fuel Use (MMCF/yr) / Annual hours of operation (hr/yr)

(b) Annual emissions (ton/yr) = Emission Factor (lb/MMcf) * Fuel Use (MMcf/yr) * (1ton/2000lbs)

LB/MMBTU

(c) Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr)

(d) Annual Emissions (ton/yr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr) * Hours of operation (hr/yr) * (1ton/2000lbs)

EMISSION INPUTS TABLE

Fuel Use (MMBtu/hr) =	1.26
Number of Boilers =	1
Hours of Operation (hr/yr) =	8760
MMBtu/MMcf =	1233
PTE Fuel Use (MMft3/yr) =	8.952

(e) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]

Global Warming Potential (GWP)		
CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) AP-42, Chapter 1.4, Table 1.4-2. Emission Factors For Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion, July 1998.

(2) AP-42, Chapter 1.4, Table 1.4-1. Emission Factors For Nitrogen Oxides (NOx) and Carbon Monoxide (CO) From Natural Gas Combustion, July 1998.

(3) AP-42, Chapter 1.4, Table 1.4-4. Emission Factors For Metals From Natural Gas Combustion, July 1998.

(4) AP-42, Chapter 1.4, Table 1.4-3. Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, July 1998.

(5) AP-42, Chapter 5.3, Section 5.3.1

(6) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 5. Hot Water Heater Emissions (HWH01)
Manufacturer Unknown; 0.03 mmBtu/hr
Diversified Midstream LLC - Glenville Station #37

Pollutant	Emission Factor			PTE (lb/hr)		PTE (ton/yr)	
Criteria Pollutants							
PM/PM10/PM2.5	7.6	lb/MMcf	(1)	0.000	(a)	0.001	(b)
SO_2	0.6	lb/MMcf	(1)	0.000	(a)	0.000	(b)
NOx	100	lb/MMcf	(2)	0.002	(a)	0.011	(b)
CO	84	lb/MMcf	(2)	0.002	(a)	0.009	(b)
VOC	5.5	lb/MMcf	(1)	0.000	(a)	0.001	(b)
Hazardous Air Pollutants							
Arsenic	2.00E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Benzene	2.10E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Beryllium	1.20E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Cadmium	1.10E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Chromium	1.40E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Cobalt	8.40E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Dichlorobenzene	1.20E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Formaldehyde	7.50E-02	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Hexane	1.80E+00	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Lead	5.00E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Manganese	3.80E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Mercury	2.60E-04	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Naphthalene	6.10E-04	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Nickel	2.10E-03	lb/MMcf	(3)	0.000	(a)	0.000	(b)
PAH/POM	1.29E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Selenium	2.40E-05	lb/MMcf	(3)	0.000	(a)	0.000	(b)
Toluene	3.40E-03	lb/MMcf	(4)	0.000	(a)	0.000	(b)
Total HAPs				0.000		0.000	
Greenhouse Gas Emissions							
CO_2	116.98	lb/MMBtu	(6)	3.51	(c)	15.37	(d)
CH_4	2.2E-03	lb/MMBtu	(6)	0.00	(c)	0.00	(d)
N_2O	2.20E-04	lb/MMBtu	(6)	0.00	(c)	0.00	(d)
CO_2e[(e)]	-	-		3.51		15.39	

Calculations:
LB/MMCF

(a) Hourly emissions (lb/hr) = Emission Factor (lb/MMcf) * Fuel Use (MMCF/yr) / Annual hours of operation (hr/yr)

(b) Annual emissions (ton/yr) = Emission Factor (lb/MMcf) * Fuel Use (MMcf/yr) * (1ton/2000lbs)

LB/MMBTU

(c) Hourly Emissions (lb/hr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr)

(d) Annual Emissions (ton/yr) = Emission Factor (lb/MMBtu) * Fuel Use (MMBtu/hr) * Hours of operation (hr/yr) * (1ton/2000lbs)

EMISSION INPUTS TABLE

Fuel Use (MMBtu/hr) =	0.03
Number of Boilers =	1
Hours of Operation (hr/yr) =	8760
MMBtu/MMcf =	1233
PTE Fuel Use (MMft3/yr) =	0.213

(e) CO_2 equivalent = [(CO_2 emissions)*(GWP_{CO2})]+[(CH_4 emissions)*(GWP_{CH4})]+[(N_2O emissions)*(GWP_{N2O})]
Global Warming Potential (GWP)

CO_2	1	(7)
CH_4	25	(7)
N_2O	298	(7)

Notes:

(1) AP-42, Chapter 1.4, Table 1.4-2. Emission Factors For Criteria Pollutants and Greenhouse Gases From Natural Gas Combustion, July 1998.

(2) AP-42, Chapter 1.4, Table 1.4-1. Emission Factors For Nitrogen Oxides (NOx) and Carbon Monoxide(CO) From Natural Gas Combustion, July 1998.

(3) AP-42, Chapter 1.4, Table 1.4-4. Emission Factors For Metals From Natural Gas Combustion, July 1998.

(4) AP-42, Chapter 1.4, Table 1.4-3. Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, July 1998.

(5) AP-42, Chapter 5.3, Section 5.3.1

(6) Emission factors are from 40 CFR 98, Subpart C, Table C-1 and C-2.

(7) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 6. Tank Emissions
Diversified Midstream LLC - Glenville Station #37

Emission Point	Tank Capacity (gal)	Tank Contents	Control Devices	Tank Throughput (bbls/day)	VOC Emission Factor (lbs/bbls)		VOC Emissions (lbs/yr)[(a)]	VOC Emissions (lb/hr)[(b)]	VOC Emissions (tons/yr)[(c)]
Tank 1	2000	Oil Tank	None	3.13	1.35E-03	(1)	**1.54**	0.000	0.001
Tank 2	4000	Pipeline Condensate	None	3.13	1.42E+00	(1)	**1618.17**	0.185	0.809
Totals							**1619.71**	**0.18**	**0.81**

Calculations:

(a) VOC Emissions (lb/day) = Tank Throughput (bbls/day) * VOC Emission Factor (lbs/bbls)

(b) VOC Emissions (lb/hr) = VOC Emissions (lbs/yr) * (yr/8760hr)

(c) VOC Emissions (ton/yr) = VOC Emissions (lbs/yr) * (1ton/2000lbs)

Notes:

(1) VOC emission factor includes Working/Breathing losses as calculated from TANKS 4.0.9.d

Table 7. Fugitive Leak Emissions
Diversified Midstream LLC - Glenville Station #37

Pollutant	Emission Factor (1)		PTE[(a) Gas Service] (tons/yr)	PTE VOC emissions (ton/yr)	PTE CO_2e emissions (ton/yr)	PTE Total HAPs emissions (ton/yr)
Valves	9.9E-03	lb/hr/source	6.035	1.218	18.580	0.008
Pressure Relief Valves	1.9E-02	lb/hr/source	0.085	0.017	0.261	0.000
Connectors (2)	8.6E-04	lb/hr/source	2.231	0.450	6.870	0.003
Open Ended Lines	4.4E-03	lb/hr/source	0.039	0.008	0.119	0.000
Compressor(s)	1.9E-02	lb/hr/source	0.255	0.051	0.784	0.000
Total	-	-	8.644	1.744	26.614	0.012

Pollutant	PTE Benzene emissions (ton/yr)	PTE Toluene emissions (ton/yr)	PTE Ethylbenzene emissions (ton/yr)	PTE Xylenes emissions (ton/yr)	PTE n-Hexane emissions (ton/yr)
Valves	5.43E-03	6.03E-06	6.03E-04	1.21E-03	1.21E-03
Pressure Relief Valves	7.64E-05	8.49E-08	8.49E-06	1.70E-05	1.70E-05
Connectors (2)	2.01E-03	2.23E-06	2.23E-04	4.46E-04	4.46E-04
Open Ended Lines	3.47E-05	3.86E-08	3.86E-06	7.72E-06	7.72E-06
Compressor(s)	2.29E-04	2.55E-07	2.55E-05	5.09E-05	5.09E-05
Total	0.01	0.00	0.00	0.00	0.00

Calculations:

(a) Annual emissions (tons/yr) = [Emission Factor (lb/hr/source)] x [Number of Sources] x [Hours of Operation per Year] x [ton/2000lb]

WET GAS INPUTS TABLE

Gas Stream Components	Wt Percent	(3)
Methane	61.03%	
Ethane	17.26%	
Nitrogen	1.38%	
CO2	0.15%	
VOC	20.18%	
Benzene	0.09%	
Toluene	0.00%	
Ethylbenzene	0.01%	
Xylenes	0.02%	
n-Hexane	0.02%	

(4) Number of Components in Gas Service

Valves =	139
Pressure Relief Valves =	1
Connectors =	593
Open Ended Lines =	2
Compressors =	3
Maximum Hour of Operation =	8,760

Global Warming Potential (GWP)

CO_2	1	(5)
CH_4	25	(5)
N_2O	298	(5)

(1) Emission factors from 1995 EPA Protocol for Equipment Leak Emission Estimates, Table 2-4 Oil and Gas Production
(2) Connectors is assumed to include flange connections in the total count
(3) VOC wt % calculated from gas sample analysis for facility
(4) *Default Average Component Counts for Major Onshore Natural Gas Production Equipment* from 40 CFR 98, Subpart W, Table W-1B
(5) Global Warming Potentials obtained from 40 CFR 98, Subpart A, Table A-1

Table 8. Compressor Blowdown Venting Emissions
Diversified Midstream LLC - Glenville Station #37

Clark; RA-32; 2SLB							
Pollutant	Volume (scf/event)	Moles	Molecular Weight of Gas[(1)]	lbs Pollutant / event	Events per Year[(2)]	Emissions (lbs/event)	Emissions (ton/yr)
VOC	1,000	2.60	20.77	10.89	156	10.89	0.849
Benzene	1,000	2.60	20.77	0.05	156	0.05	0.004
Toluene	1,000	2.60	20.77	0.00	156	0.00	0.000
Ethylbenzene	1,000	2.60	20.77	0.01	156	0.01	0.000
Xylenes	1,000	2.60	20.77	0.01	156	0.01	0.001
n-Hexane	1,000	2.60	20.77	0.01	156	0.01	0.001
CO2e	1,000	2.60	20.77	823.26	156	823.26	64.21

(1) Taken from supplied gas analysis.

(2) Worst case blowdown events per year = 156 : 1 blowdown per week, per unit x 3 units x 52 weeks = 156 blowdown events per year

TOTAL		
Pollutant	Emissions (lbs/event)	Emissions (ton/yr)
VOC	10.89	0.85
Benzene	0.05	0.00
Toluene	0.00	0.00
Ethylbenzene	0.01	0.00
Xylenes	0.01	0.00
n-Hexane	0.01	0.00
Total HAPs	0.08	0.01
CO2e	823.26	64.21